

## CLAIMS

1. That method of irradiating, in a gaseous medium, a hollow open-mouthed container having an axis and having walls of varying thickness, which method comprises

directing primary electrons laterally against said container as a sheet extending along said axis and more than the length of said axis,

said primary electrons having energy insufficient to penetrate through the entire container (i.e. two walls) at the thicker portions of said walls but sufficient to penetrate the entire container (i.e. two walls) at the thinner portions of said walls,

the dose delivered to said thicker portions by said primary electrons being supplemented by secondary electrons produced by scattering of said primary electrons by said gaseous medium and said container.

2. Method of using reduced electron energy for the sterilization of preformed open-mouthed containers, comprising the following steps:

producing an electron sheet in an electron-scattering gaseous region with a cross-sectional length  $L$  and width  $W$ ,

conveying an open-mouthed container having an axis with a length less than  $L$  transversely through said sheet in such a manner that the extremities of said sheet by-pass said container while the region between said extremities passes through said container,

said axis being parallel to said sheet as said container passes through said sheet,

the energy of said electrons being sufficient to provide the required minimum dose to all surfaces of said container while remaining below that required for full penetration of the thicker regions of the container.

3. Method in accordance with claim 2, wherein the maximum treatment level delivered by said electrons remains below the threshold dose at which said electrons cause damage to said container.